

REMARKS

The application is amended to place it in condition for allowance at the time of the next Official Action.

Claims 2, 4, 6, 8-11, 15-36 and 38-55 were previously pending in the application. Claims 2, 4, 6, 8-11, 15-36 and 38-53 are canceled and new claims 56-60 are added. Therefore, claims 54-60 are presented for consideration.

Applicants note with appreciation the indication that claims 6, 8, 16, 18, 19 and 21 are allowed and that claims 9, 11, 30-32, 34, 42, 44, 45, 47, 48, 50, 51 and 53 are allowable.

Claims 2, 4, 10, 15, 22-29, 33, 35-41, 43, 46, 49 and 52 were rejected under 35 USC 103(a) over ABE et al. 6,661,476 in view of SHIMADA et al. 6,448,578 and further in view of FUJIKAWA 6,414,738. That rejection is respectfully traversed.

Claim 54 is amended and recites that the terminal of the lines is absent a transparent conductive film. See, for example, Figures 2A-2D, wherein the transparent conductive material 21 is absent from the terminals 22, 23.

ABE, SHIMADA and FUJIKAWA fail to disclose or suggest the structure of the scan, signal, and/or common lines at the terminals thereof. Nevertheless, the pixel electrode of these references is formed on the protective insulating film and is in contact with the source electrode of the TFT by way of the opening of the protective insulating film.

Therefore, it appears that the same transparent conductive film as the pixel electrode is formed on the metal films that constitute the respective lines at the terminals thereof.

In contrast, the lines of the present invention at the terminals, the metal film (i.e., the TiN film) at the top of the lines is not covered with a transparent conductive film, but is exposed. This recited feature is a patentable difference from these cited references.

Moreover, ABE, SHIMADA and FUJIKAWA fail to disclose the advantages obtained by the above feature (i.e., a problem to be solved by the invention) to suppress the increase of the electrical connection resistance at the terminals of the lines and to improve the connection reliability at the terminals.

For at least this reason, the proposed combination of references does not suggest a need to expose the metal films (i.e.. the TIN films) that constitute the respective lines at their terminals, as shown in the present invention.

In the present invention, since the connection reliability at the terminals is improved, there is no need to cover the terminals with a transparent conductive film. As a result, as shown in the second embodiment of the present invention, there is an advantage that the number of steps of the photolithography processes can be decreased by one in the fabrication processes of a lateral electric-field type LCD device

by forming the pixel electrode with a metal film. (This is because the formation and patterning of a transparent conductive film are omitted.)

As explained above, the recited feature that the top of the multilevel conductive structure of each of the lines comprises a TIN film having a nitrogen concentration of 25 atomic % or higher at the terminal and that such structure at the terminal is absent a transparent conductive film is novel. Moreover, this feature leads to a non-predictable advantage that the connection reliability at the terminals is improved. Therefore, the present invention is believed not to be obvious over these cited references.

In view of the present amendment and the foregoing remarks, it is believed that the present application has been placed in condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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